

ABSTRACT OF THE DISCLOSURE

Aspects according to the invention relate to a catalytic combustor system for a turbine engine and an associated method. Catalytic combustors are used in connection with turbine engines because they can minimize the formation of oxides of nitrogen during combustion. Despite this emissions advantage, catalytic combustion systems can increase the level of CO in the turbine exhaust. According to aspects of the invention, vortex formation devices includes vortex generators, swirlers and mixers can be placed downstream of each catalytic module surrounding the pilot nozzle so as to form one or more vortices in the otherwise substantially laminar flow exiting the modules. The vortices can create a suction so that a portion of the flow exiting the pilot nozzle is mixed with the flow exiting the catalyst modules. The introduction of the higher temperature pilot flow can accelerate the catalytic reaction time, promoting burnout of the CO formed during combustion.